

WHAT IS CLAIMED IS:

1. A method for punching a guide notch in a polymeric zipper having a male and female track with respective fins, comprising the steps of:

sliding said zipper into position in a punch housing;

punching a guide notch into said zipper, said guide notch defined by a plurality
5 of edges in said zipper; and

guiding said plurality of edges of said zipper out of said punch housing.

2. The method of claim 1, wherein the step of sliding said zipper into a punch housing comprises sliding said zipper through a slot and into a punch area of said punch housing.

3. The method of claim 1, wherein the step of punching a guide notch into said zipper comprises forming a guide notch into said male and female tracks and said respective fins.

4. The method of claim 1, wherein the step of punching a guide notch into said zipper comprises pressing a punch through said zipper and then retracting said punch to its original position.

5. The method of claim 1, wherein the step of guiding said plurality of edges of said zipper out of said punch housing comprises engaging at least one of said male and female tracks of said zipper with a guide and sliding said guide notch out of said punch housing.

6. The method of claim 5, wherein said zipper is inserted into said punch housing at a first slot and exits said punch housing at a second slot on an opposite side of said punch area from said first slot, said guide acting as a bridge between said two slots.

7. The method of claim 6, wherein said first and second slots form track receiving openings to receive said male and female tracks, said track receiving openings being larger than the rest of said first and second slots, and said track receiving opening on said second slot is larger than said track receiving opening on said first slot.

8. The method of claim 5, wherein said guide has a stepped portion that engages at least one of said male and female tracks, thereby keeping said tracks in line with an exit slot.

9. The method of claim 5, wherein said guide is beveled towards an exit slot, thereby acting as a ramp for said tracks to an exit slot.

10. A punching apparatus for punching a guide notch in a strip of a polymer zipper, said zipper having a female track and a male track, said punching apparatus comprising:

a housing having a first slot, a second slot, and an open region between said first and second slots;

a punch slideably moveable within said open region, said punch entering said open region orthogonal to a slot plane defined by said first and second slots; and

a guide slideable into said open region, said guide entering said open region in a plane that is generally parallel to said slot plane.

11. The punching apparatus of claim 10, wherein said punch cuts through said zipper when said punch enters said open region, creating a guide notch.

12. The punching apparatus of claim 11, wherein said guide notch in said zipper is bounded on two ends by said male and female tracks, and said guide engages at least one of said male and female tracks to guide said zipper through said punching apparatus.

13. The punching apparatus of claim 12, wherein said guide has a stepped edge to engage at least one of said male and female tracks.

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14. The punching apparatus of claim 13, wherein said stepped edge is beveled in the direction of movement of said zipper, creating an angled step and acting as a ramp for at least one of the male and female tracks of said zipper.

15. The punching apparatus of claim 12, wherein said guide has a beveled edge in the direction of movement of said zipper through said punching apparatus, said beveled edge acting as a ramp for at least one of said male and female tracks of said zipper.

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16. The punching apparatus of claim 15, wherein said guide is beveled at an angle of approximately four to approximately six degrees.

17. The punching apparatus of claim 11, wherein said guide notch is formed by a plurality of edges.

18. The punching apparatus of claim 17, wherein said guide notch is U-shaped, bounded on three sides by said edges.

19. The punching apparatus of claim 17, wherein said plurality of edges comprise a first edge, said first edge beginning at said male and female tracks and extending downward into said fins below said male and female tracks, a second edge beginning at an end of said first edge and extending perpendicular to said first edge along said
5 fins, and a third edge beginning at an end of said second edge opposite said first edge, and extending upward through said fins through said male and female tracks, said third edge generally parallel to said first edge.

20. The punching apparatus of claim 10, wherein said guide has a width approximately equal to the width of said punch.

21. The punching apparatus of claim 10, wherein said guide has a width approximately 15 to approximately 30% less than the width of said punch.

22. The punching apparatus of claim 10, wherein said punch is within approximately 0.0004 inches of said housing.

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23. The punching apparatus of claim 10, wherein said first and second slots form track receiving openings to receive said male and female tracks, said track receiving openings being larger than the rest of said first and second slots, and said track receiving opening on said second slot is larger than said track receiving opening on said first slot.

24. The punching apparatus of claim 10, wherein said guide is adapted to engage at least one of said male and female tracks and to guide said male and female tracks through said second slot.

25. A punching apparatus for cutting a guide notch into a zipper of a polymeric bag, comprising:

a housing forming an opening on the inside of said housing, a first slot in said housing leading said zipper into said opening and a second slot leading said zipper from said opening;

a punch in slideable engagement with said opening, said punch creates a guide notch in said zipper in response to being moved into said opening while said zipper is present; and

a guide mechanism for moving into said opening and disposed generally perpendicular to a direction of movement of said punch, said guide engaging ends of said guide notch and guiding said zipper to said second slot when said zipper is being advanced to another position.

26. The apparatus of claim 25, wherein said housing further forms a guide slot, shaped to receive said guide and in communication with said opening, wherein said guide slot has a width that is approximately equal to a width of said punch.

27. The apparatus of claim 25, wherein said housing further forms a guide slot shaped to receive said guide and in communication with said opening, said guide slot having a width that is approximately 15 to approximately 30% less than the width of said punch.

a housing having a channel with a guide notch cutting region at an intermediate section of said channel;

a punch slideable within said channel and cutting said guide notch in said zipper when advancing through said guide notch cutting region of said channel, said guide notch having a leading edge and a trailing edge defined with respect to the movement of said zipper relative to said housing;

a first zipper guide slot formed in said housing for guiding said zipper into said guide notch cutting region;

a second zipper guide slot formed in said housing for guiding said zipper from said guide notch cutting region; and

a guide mechanism that moves into said channel, said guide mechanism guiding said trailing edge of said guide notch to said second zipper guide slot.

29. The punching apparatus of claim 28, wherein said first and second zipper guide slots form track receiving openings to receive a portion of said zipper that is larger than the rest of said first and second zipper guide slots, and said track receiving opening on said second zipper guide slot is larger than said track receiving opening on said first track.

30. The punching apparatus of claim 28, wherein said guide mechanism has a stepped edge to engage said trailing edge of said guide notch to said second zipper slot.

31. The punching apparatus of claim 30, wherein said stepped edge is beveled in a direction with respect to the movement of said zipper, creating an angled step and acting as a ramp for at least one of said male and female tracks of said zipper.

32. The punching apparatus of claim 28, wherein said guide mechanism has a width approximately equal to the width of said punch.

33. A method for punching a guide notch in a polymeric zipper, comprising:
advancing said zipper into a guide notch forming region of a punch housing;
punching a guide notch into said zipper, said guide notch defined in part by a
leading edge and a trailing edge; and
5 engaging said trailing edge of said guide notch with a guide mechanism to
control the movement of said trailing edge.

34. The method of claim 33, wherein the step of advancing said zipper into a
guide notch forming region of a punch housing comprises sliding said zipper through
a first zipper guide slot and into a guide notch forming region of said punch housing.

35. The method of claim 33, wherein the step of punching a guide notch into said
zipper comprises forming a guide notch into a male track, a female track and said
respective fins of said zipper.

36. The method of claim 33, wherein the step of punching a guide notch into said
zipper comprises pressing a punch into said zipper and then retracting said punch to
its original position.

37. The method of claim 33, wherein the step of engaging said trailing edge of
said zipper to control the movement of said zipper comprises engaging at least one of
a male and female tracks of said zipper with a guide mechanism and sliding said guide
notch out of said punch housing.

38. The method of claim 37, wherein said zipper is inserted into said punch
housing at a first zipper guide slot and exits said punch housing at a second zipper
guide slot on an opposite side of said guide notch forming region from said first
zipper guide slot, said guide acting as a bridge between said two slots.

39. The method of claim 38, wherein said first and second zipper guide slots form track receiving openings to receive a portion of said zipper, said track receiving openings being larger than the rest of said first and second zipper guide slots, and said track receiving opening on said second zipper guide slot is larger than said track receiving opening on said first zipper guide slot.

40. A method for punching a guide notch in a polymeric zipper having a male and female track with respective fins, comprising the steps of:

sliding said zipper through a first slot and into an open region of a housing;
punching a guide notch into said zipper with a punch moving within said open region;

retracting said punch from said open region of said housing;
inserting a guide into said open region of said housing;
engaging said guide to at least one of said male and female tracks;
advancing said zipper through a second slot, said second slot being on an opposite side of said open region as said first slot; and
retracting said guide from said open region.